

On the Definition and Distribution of Serial Verb Constructions

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1. Introduction¹

The term 'Serial Verb Construction' has been applied to a wide range of phenomena, in the literature and even (or perhaps especially) at this conference. In this paper I hope to clarify some definitional points concerning serial verb constructions and in addition provide some explanation of the distribution of serial verb constructions in the languages of the world. To go into the depth necessary to fully explicate the points I wish to make is not possible in a brief paper, and interested readers may wish to consult my dissertation (Schiller 1990d) and related papers (Schiller 1989c, 1990a, 1990b). I have made a few changes in my analysis since the conference, thanks to insightful presentations by Geoff Pullum and Pieter Seuren (this volume), who deserve more than mere footnoted acknowledgement.

The first part of the paper will be concerned with the definition of serial verb constructions, or, properly, serial verb phrase constructions. This will include an overview of more than 20 years of work on the question, which might profitably be presented in a volume of papers devoted to serial verbs. The presentation and discussion of these proposals will necessarily be brief. I will conclude by adding my own definition to the heap. Next, I will turn to the distribution of serial verb constructions in the languages of the world, presenting the factors which give rise to such constructions. The paper employs the framework of Autolexical Syntax as developed by Jerrold M. Sadock (1985, 1988 to appear), with a few amendments (Schiller 1989d, 1990b).

2. Defining Serial Verb Constructions

Coordinate serial verb constructions which lack a surface conjunction are largely excluded from consideration here. Deictic serials, unjustly neglected to date, despite a few papers cited in Pullum (1990), are those which combine a deictic verb, usually meaning 'come' or 'go', with a verb phrase. These are, in fact, the most frequently encountered serial structure, being present in many languages which otherwise lack serials (see Schiller 1990d: Chapter 3). Sebba (1987) convincingly distinguishes Subordinating Serial Verb Constructions from Coordinating Serial Verb Constructions, the former showing the following characteristics.

1)

- i. "Although two or more verbs are present, the sentence is interpreted as referring to a single action rather than a series of related actions. Although the action may involve several different motions there is no possibility of a temporal break between these and they cannot be performed, for example, with different purposes in mind..."
- ii. "There is a strict ordering relationship between the verbs..."
- iii. "Furthermore, the first verb in a series may subcategorize for a particular verb or class of verbs..."
- iv. "In some cases, each transitive verb in the series has its own object..."

Filbeck (1975) was a little more specific in his definition of serial verb constructions:

2)

"The initial verb, or V_1 , of a series is propositional, i.e. this is the verb that carries the true predicate meaning of the proposition; any subsequent verb, or V_{1+n} , states a functional meaning which is related to the predicate or propositional meaning of the initial verb."

Jansen, Koopman & Muysken (1977) suggested the following "Rough working definition".

- 3) "Serial verb constructions are constructions which:
 - (a) contain only one overt subject, and more than one verb;
 - (b) contain no overt conjunctions or complementizers;
 - A further characteristic of serial constructions is that:
 - (c) if one of the verbs in the construction serves as an auxiliary or a modal auxiliary to another verb, it is not a serial verb construction;
 - (d) if one verb serves as an infinitive complement to another verb, it is not a case of serialization;
 - (e) often there is in the construction one "lexical verb", selected from a large class, and one or more "grammatical" verbs, selected from a very limited, closed class. ...
 - (f) the configuration V NP V NP is indicative of serialization;
 - (g) in the configuration $V_1 V_2 \dots V_{n-1} V_n$, only V_1 can be the "lexical" verb in serial constructions, and only vn in infinitival complements or constructions with modal auxiliaries."

Of these criteria some are appropriate (b,c,e,f), some require a clear definition of a finite/non-finite distinction which has not been clearly proven for isolating languages (d,g), and one (a) requires a definition of what it means to be a subject which is not supplied in the work cited.

Bradshaw (1982) provided a definition which involves semantic, intonational, syntactic and morphological criteria:

- 4)
 - (i) All verbs in the serial construction refer to subparts of a single overall event.
 - (ii) There is no intonational or grammatical marking of clause boundaries between the verbs.
 - (iii) There are tight restrictions on the nominal arguments associated with each verb.
 - (iv) There is no contrast in the basic inflectional categories of serialised verbs.

There is nothing wrong (in principle) with a multi-modular definition of verb serialization, but this definition is lacking both in formality and accuracy. The first two points are uncontroversial and accurate. The third point does not hold for all serial constructions, and it is not clear what types of restrictions could be developed to account for all of the data found in the variety of languages examined in the present work. It is certainly true that some serial constructions have restrictions on nominal arguments, this is less clear in, for example, directional and instrumental constructions.

The fourth consideration is whether a concise definition should include both inflectional marking and the "Same Subject Constraint" which will be discussed below. There is one piece of data from Sakao (discussed below) which even contradicts the demand that inflectional categories of serialized verbs must not be different, so I will propose that only tense/aspect marking be so constrained. I find grounds for rejecting the latter constraint on a number of grounds, presented below.

The most recent definition of serial verbs is that proposed in Seuren (1990):

"In summarizing, we can say that verb serialisation is the result of ungoverned pseudocomplementation with the following other conditions:

- a) The pseudocomplement is lexically bare in the sense that it cannot be within the exclusive scope of a tense or negation operator.
- b) The complement-predicate is a surface verb.
- c) No syntactic processing takes place other than simple SSD³, with the result that a serial verb construction manifests itself as a VP with (subject- or object-) governed deletion of the subject.

- d) It is added to a sentence which would be well-formed without the serial verb construction."

Seuren defines pseudocomplementation as follows: "A pseudocomplement is a suppositional sentential complement, foisted on a verb whose meaning requires no such complementation, and expressing concomitant circumstance, purpose, or result." In a governed pseudocomplement, "The possibility of taking a pseudocomplement is lexically defined, in the language in question, for each verb that can take a pseudocomplement. The pseudocomplement then represents a possible extra argument term for the verb in question."⁴

Seuren's (a-d) seem to be acceptable components of a definition of subordinating serial V construction, but his definition of "pseudocomplement" is not easily applied and tested.

We now turn to the question of which of the many criteria cited above should be rejected, and which should be retained.

2.1. Some Tests that Fail

Many authors in the past two decades, including Foley and Olsen (1985) continue to assume a "Same Subject Constraint" whereby the subject of each of the serial verbs in the sentence must be the same. This constraint should not be applied. First of all, often an explicit subject of the lower clause is also ungrammatical if the intonation contour of a single sentence is maintained, as in (5a and 5b), and second, an indefinite non-coreferent subject is also possible, as in the Khmer example (6a). In that example, there is an understood indefinite subject of the verb 'to hear', but one cannot insert the indefinite pronoun as in (6b), unless one makes an exaggerated pause after /hou/ and creates a topicalized sentence.

- 5) a. *sùk ʔaw máy titima maa (Thal)
Sook take wood Titima come
b. *sùk ʔaw máy sùk maa
Sook take wood Sook come
- 6) a. tuuk crəh hou luu sou khlaŋ naŋ (Khmer)
water fall flow hear noise strong very
'The waterfall flows making a very loud noise.'
b. *tuuk crəh hou kee luu sou khlaŋ naŋ
water fall flow prn. hear noise strong very
'The waterfall flows making a very loud noise.'

The examples above may be classified as Ambient Serialization, a term borrowed from Crowley (1987), who gives the following example:

- 7) Kihulin ato kail hemal (Paamese)
(kɪ-huli-nV atoo kalle he-malu)
2sg-dis-count-comm/obj chicken pl 3sg-dis-be correct
'Count the chickens correctly.'

Crowley notes that:

"In this example, it is neither the subject of the first verb, i.e. the second person singular pronoun, nor the object of the first verb, i.e. *atoo kalle* 'the chickens' that is marked on the second verb. Rather, the second verb refers simply to the general act of counting, with no particular participants in mind."

In (8) we see that the shared NP can be either subject or object, depending on the presence of the infix *-r(t)-* which codes what Durie (1988) calls 'moving-Undergoer-sharing'⁵.

- 8) a. me-ke r-lam (Sakao)
3sg-take rt-come
He handed it hither. (He took it and it came.)

- b. me-ke-lam
3sg-take-come
He brought it. (He took it and he came.)

Next, there is the curious case of Yankuntjatjara (Goodard 1988), an Australian language which has a pair of serial constructions, which differ in interpretation with regard to the subject, where the different subject reading is (literally) unmarked while the same subject interpretation requires an explicit marker:

- 9) a. Ngayulupatangara-ngu waru-ku yanku-nytja-la
lsgNOM fall-PAST firewood-PURP go-NOML-LOC
I fell while someone else was going for firewood.
* I fell while I was going for firewood.
- *b. Ngayulupatangara-ngu ngayulu waru-ku yanku-nytja-la
lsgNOM fall-PAST lsgNOM firewood-PURP go-NOML-LOC
I fell while going for firewood
- c. Ngayuluwaru-ku yanku-la patangara-ngu
lsgNOM firewood-PURP go-SERIAL fall-PAST
I fell while I was going for firewood.

Goddard (1988) suggests that (9a), known as the circumstantial construction, arose and grammaticalized the different-subject condition because it was able to exploit an opposition with the serial verb construction (9c.) The relevance of this example lies in the problems posed for definitions of Serial Verb Constructions. If in some languages, some serial constructions are explicitly marked, and others are unmarked, and there is a significant property which is not shared, (same/different subject marking in the present case), then it will be hard to generalize about properties of serial verb constructions as a whole. In the present case we are not dealing with constructions which meet definitions of serialization applied here, as from a syntactic standpoint we are dealing with nominal rather than verbal material in the lower clauses of (9a) and (9b). Only (9c) fits the pattern of serialization, yet it is precisely this construction which violates the same-subject condition.

There is a clear exception to the same-subject constraint in serialized directional complements:

- 10) Kofi hari a ston go na ini a olo (Sranan)
Kofi pull the stone go LOC in the hole
'Kofi pull the stone into the hole'

Here the subject of the verb *pull* is not the subject of the verb *go* on anyone's account. One might therefore conclude that serial verb constructions involve either a shared subject or a shared object, as suggested by Seuren. But even here there is a problem. Consider the following example from Yoruba.

- 11) Olu lé omo náà wá ilé (Yoruba)
Olu drove child the [come] home
'Olu drove the child home.'
'Olu drove the child and they came home.'

How does one account for the two different interpretations of this sentence? Assume that despite the conjunction in the second gloss, that the sentences are the same syntactically. The fact remains that the subject of the lower clause can be either the object of the higher clause or both the subject and the object of the higher clause. Furthermore, a question arises as to the interpretation of the deictic term *home*. Does it refer to the home of the child or the home of Olu? From the English glosses one might well conclude that that in the first case the action was directed to the home of the child, but in the latter, that the action was directed to the home of Olu, though, if they were related, the referent might be the same.

would be given to the two conjuncts each taken separately." From a syntactic viewpoint, the most important difference is the availability of conjunctions, as mentioned above. These differences can be shown in the following examples, where (17.a) and (18.b) are straightforward coordination and the primed examples are serialized constructions.

- 17) a. Osinaa doroba no na opamm tam no (Akan)
 he-thread-PAST needle the and he-sew-PAST cloth the
 a'. Osinaa doroba no pamm tam no
 'S/he threaded the needle and sewed the cloth'
 b. Osina doroba no na ampamm tam no
 he-thread-PAST needle the and he-NEG-sew cloth the
 b'. *Osina doroba no mpamm tam no
 'He threaded the needle and didn't sew the cloth'

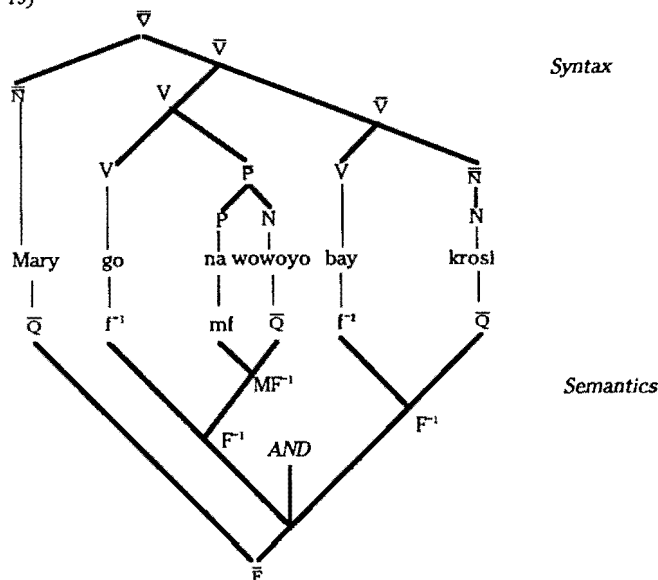
In the positive examples (17.a) the conjunction can be either present or absent, but in the negative examples (17.b) the conjunction is obligatory, and the purely serialized form with negation in the lower clause is ruled out. Sebba gives further evidence involving adverbs, and argues that the serialized forms are examples of \bar{V} coordination rather than sentential coordination. This analysis seems to be correct.

Strong additional support for the difference between coordinating and subordinating serial verb phrase constructions is provided by extraction phenomena. Sebba (1987:100ff) shows that the coordinate structures (e.g. 18.a) do not allow the sort of extraction prohibited by the Coordinate Construction Constraint (Ross 1967), while subordinate structures (18.b) do.

- 18) a. Mary go na wowoyo bay krosi
 Mary go LOC market buy clothes
 'Mary went to market and bought clothes.'
 a'. *Soortukrosi Mary go na wowoyo bay Ø?
 What (sort of) clothes did Mary go to market and buy?
 b. Kofi teki a neli koti a brede
 Kofi take the knife cut the bread
 'Kofi took the knife and cut the bread = Kofi cut the bread with a knife.'
 b'. San Kofi teki a neli koti
 What Kofi take the knife cut Ø?
 'What did Kofi cut with the knife?'

Though Autolexical accounts of coordination have not yet been developed, it seems reasonable to follow Sebba's line and treat Coordinating Serial Verb Constructions as coordinated \bar{V} 's in the syntax. In the semantics it remains an open question whether the coordination applies to F' or \bar{F} , i.e. to one-place predicates or full propositions, but this question lies outside the scope of the present work. One might represent the coordinating serial construction (18.a) as in (19):

19)



2.3. Deictic Serialization

This type of serial constructions involves a deictic verb followed by a verb phrase. It exists even in English, and can be found in many languages which do not otherwise show evidence of serial verb constructions, such as Arabic (Hussein: this volume). I will leave discussion of these to Geoff Pullum (this volume) and Dal (this volume), but add a few more examples in (20).

- 20)a. tau yock ksaet mook (Khmer)
go take newspaper come
'Go get the newspaper.'
- b. Di kabudu go pe foh de kill uman dehn, plkin dehn (Krio)
The gang go pay for they kill woman DEM-pl children DEM-pl
'This gang pays for the killing of women and children.'
- c. Anda ola kantu akel sinu ten taju. (Malayo-Portugese Cr.)
go see if that gentleman is home
'Go and see if that gentleman is at home.'
- d. Viens prendre ta lettre (French)
come take your letter
'Come take your letter.'

2.4 Serialization, Concatenation, and Complementation

In the literature the term *serial* has been applied to many types of structures, only some of which meet the defining criteria proposed above. Here some of the other constructions which have been, or might be called serial verb constructions will be briefly considered.

i. V + V structures in work on Tibeto-Burman languages (Matisoff, 1973).

- 21) $\eta\grave{a}$ -hi ga q\3? ch\1 t\5? p\1 ve (Lahu)
 we had-to again lift out for P_{univ(affirmation)}
 V_v V_v V_h V_v V_v
 'We had to lift (it) out again for (them).'

In the example, *ch\1* is the head verb, according to Matisoff's analysis, with two "versatile verbs" on either side of it. I will refer to these structures, which involve the concatenation of simple verbs, as Verb Concatenation Structures, represented by V*. I will assume a structural representation of the syntax, in which the verbs are conjoined under a V-node. These structures can be analyzed either as coordinate structures or incorporation structures. The latter seems more appropriate, since in the case of those languages which have inflectional devices, inflection is marked only on the heads of compound verbs, e.g.

- 22) T\5s onak lah pil (Paamese)
 (toose ona-ku lahl pilu)
 torch poss-1sg 3sg-real-carry stick together
 'My torch shines with a narrow beam.'

ii. V+V structures in work on Dravidian languages (Steever 1988, Fedson, 1981, Nagarajan 1990), and sometimes in work on Vietnamese and Khmer (Mikami, 1981).

- 23) \en j\5x man-d-an ci?-d-an (Kurux)
 1-nom servant be-pres-1s do-temporarily-pres-1sg
 'I am becoming a servant temporarily.'

From a purely syntactic point of view, the structure of this type of sentence is that of auxiliary verb + V complement. I will accordingly adopt the term Auxiliary Structure to describe this form of serial structure, sometimes employing the abbreviation [V+V*].

iii. V+V subordinating serial verb structures in work on Creole and Mainland Southeast Asian languages (Li 1973, Filbeck 1975, Bamgbose 1986, Sebba 1987, Baker, 1989, Seuren 1990).

- 24) Kofi naki Amba kiri (Sranan)
 Kofi hit Amba kill
 'Kofi struck Amba dead.'

This is the typical serial verb construction which is the subject of investigation in the present study. These will be designated Serial V Constructions and will be abbreviated [V*]. The phrase structure of these constructions will be discussed below.

iv. Finite V+ Finite V structures in work on Saramaccan Creole (Byrne, 1987, 1990).

- 25) a. a b\1 f\5f\1 d\1 w\5su kab\5 (Saramaccan)
 he TNS paint the house finish
 'He had painted the house already.'
 b. a f\5f\1 d\1 w\5su b\1 kab\5
 c. a b\1 f\5f\1 d\1 w\5su b\1 kab\5

This is a very rare type of serial structure, found only in Saramaccan, Cape Verde Kriolu and Guinea Bissau Creole⁷. Here it seems that not just a verb phrase is serialized, but a larger constituent consisting of a verb phrase plus tense/aspect and negation markers. Both the data and analysis remain controversial, but accepting the analysis in Byrne (1987), we will indicate these as Finite \bar{V}^* , using the term Finite Serial \bar{V} Structure to describe them.

It will later prove convenient to distinguish concatenation from the other types of structures. The term Phrasal Serialization will be used for all serial forms which involve \bar{V} constituents.

2.5. Structural Properties of Subordinating Serial \bar{V} Constructions

We have already examined some definitional criteria and tests which have failed to properly characterize or distinguish subordinating serial verb constructions. Now let us turn to two conditions which do seem to be helpful in this regard.

2.5.1. The Tense-Aspect Simultaneity Condition (TASC)

In Schiller (1989c) the *Tense-Aspect Simultaneity Condition*, which merely recapitulates an observation made by many scholars, was proposed as a condition on Serial Verb Constructions. Acting upon inspiration from Marshall Lewis (1990), I have changed the wording, but not the meaning, of the condition.

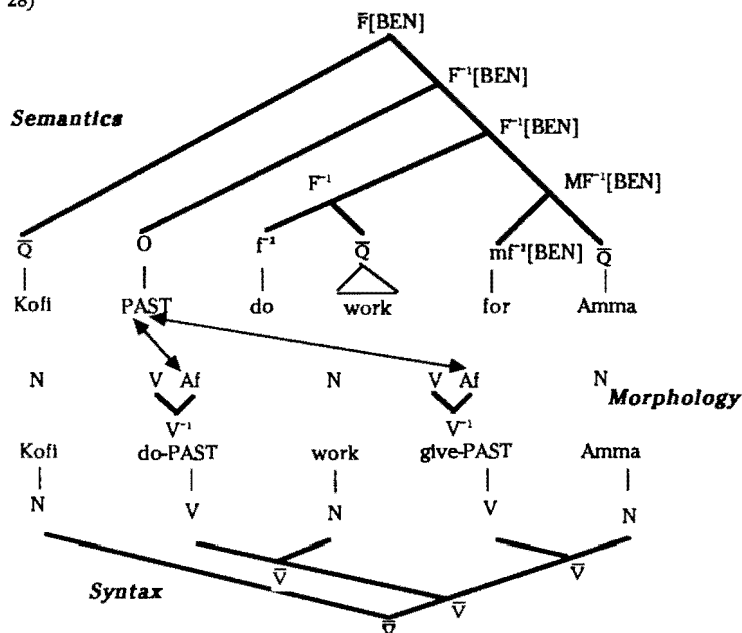
26) *Tense-Aspect Simultaneity Condition: The serialized constituents involved may only bear a single value for tense or aspect operators.*

In a language which has morphological inflections for tense or aspect, this will have the following consequences. In a subordinating serial verb construction, the multiple verbs may each be marked for tense or aspect, but there must be only a single tense or aspect involved⁸. Alternatively, the marking may be borne by only one verb, in which case it has scope over the entire construction.

Baker (1989) points out that this is consistent with his GB analysis, since features present under INFL are copied onto the heads of VP's. Thus, for him, the syntactic headship of each of the verbs is demonstrated. Autolexical theory provides the possibility of the tri-modular representation of (27) as shown in (28):

- | | | |
|-----|---|--------|
| 27) | Kofiye ye-e adwuma ma-a Amma Kofi do-PAST work give-PAST Amma 'Kofi worked for Amma.' | (Akan) |
|-----|---|--------|

28)



This tree shows that in the semantics, represented by the upper half of the tree, a single aspect marker is present, instantiated twice in the morphology, represented by the lower half of the tree. This "spreading", as Byrne (this volume) terms it, is common in those \bar{V} -serializing languages which have inflectional morphology to indicate tense or aspect. The only significant difference between Byrne's analysis and the Autolexical approach to spreading is that in the approach adopted here the category of tense would not appear in the syntactic representation at all, as it is only a semantic entity in Akan, which is instantiated directly in the morphology without being mediated by any syntax at all.

2.5.2. The Unseparability Condition

In order to distinguish Subordinating Serial Verb Constructions from Coordinating Serial Verb Constructions, Schiller (1989c, revised slightly here) suggested that for the former type, the following test applies:

29) *Unseparability Condition: No conjunctive particle can appear in, or be inserted between, the serialized constituents without altering the meaning of the sentence.*

This can be illustrated in (30 and 31), where the sentences take on different meanings depending on the presence or absence of a conjunction. In (30), the implication is that the food also arrived at the house, but (31) carries with it no such implication.

- 30) kōāt yōok mhoup mōok phtēāh (Khmer)
 prn. take food come house
 'He brought the food home.'
- 31) kōāt yōok mhoup haay-nun mōok phtēāh
 prn. take food and come house
 'He took the food and then came home.'

2.5.3 The Phrase Structure of Serial Verb Constructions

A number of surface structure representations have been proposed for Subordinating Serial V Constructions. These structural descriptions are presented below. In each case it is the surface representation that is given, and not the deep structure posited in some transformational accounts.

The earliest discussion of serial verbs was a pedagogical grammar (Christaller 1875) which contained little theoretical discussion but did distinguish two types of combinations, including an "essential combination" where

"one verb is the principal, and nother is an auxiliary verb, supplying, as it were, and adverb of time or manner, [...] or forming or introducing a complement [...] or adjunct [...]; or the second verb is supplemental, forming part of a verbal phrase. The actions expressed by both verbs are simultaneous and in an internal or inseparable relation or connection. In this case, the auxiliary or supplemental verb is coordinate only in form, but subordinate in sense, whether it be preceding or succeeding the principal verb".

What is so remarkable about this quotation is that it seems to capture exactly the same insights as the autolexical account, if we take Christaller's "form" to represent syntax and his "sense" to represent semantics, a fairly obvious interpretation.

The earliest treatment of serial verbs from a transformational perspective was presented in Stewart (1963). This analysis assumed two underlying sentences which underwent an obligatory transformation to form a single surface entity.

Categorial considerations entered the picture in Ansre (1966), which discussed some serial verbs as behaving syntactically in a manner later to be termed 'coverbs'. These will be discussed in Chapter 6. For present purposes, it is simply important to note that Ansre realized that although the serialized formatives were identical in form to verbs, they often had qualities of other categories: "[...] many verbs when they stand next to others play the part of English prepositions, adverbs, or conjunctions." But Ansre was not focussing on the syntax of these items so much as their morphology ("they are no longer conjugated") or semantics.

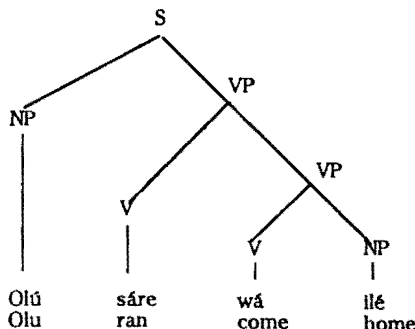
The question of base-generation versus transformational derivation of serial verb structures was a subject of continuing debate in the mid-1970's. Stahlke (1970) launched a major debate when he presented a Generative Semantics account of serialization. His careful study rejected a coordination treatment. He noted that serial structures and those with overt coordination differed in that the latter could take an additional conjoined sentence which contradicts an implication of the conjoined structure. Thus, to use English paraphrases of his Yoruba examples for clarity, the serial structure 'I take book come home' differs from 'I take book and come home' in that only in the latter case is it possible to continue the sentences with 'but I forgot to bring it [the book]'.

On a more concrete syntactic level, he noted that the object NP's of serial verbs can be Wh-fronted, which, if conjunction were involved, would violate the Coordinate Structure Constraint of Ross (1967), a constraint which seems to hold in Yoruba, according to Sebba (1987). Finally, he noted that all of the serialized verbs must agree with regard to negation, auxiliaries and mood.

Stahlke also considered the possibility that the serialized verbs might be case markers, but rejected that possibility on grounds which were then relevant, but which seem less so today (if one accepts radical autonomy of components.) So, for example, one objection was that these lexemes are inflected for case (a morphological consideration). Another objection, based on the notion that redundancy in grammar was somehow undesirable, was that these case markers could be replaced by lexically distinct prepositions. This objection will be taken up in Chapter 6.

Bamgbose (1974) was primarily concerned with differentiating two types of serials, linking (what has been described here as coordinate) and modifying (what has been described here as subordinate). For the latter type, which is our concern in this section, he posited the following structural description (32):

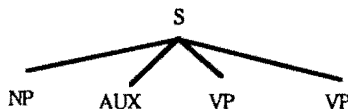
32)



This description involves syntactic subordination of the lower VP within the scope of a VP.

A major syntactic analysis was carried out by Schachter (1974). His primary concern was whether serial structures were base generated or derived via transformations. He proposed the following base-generated structure:

33) Schachter (1974) $[S \rightarrow NP \text{ Aux VP VP}^*]^{10}$

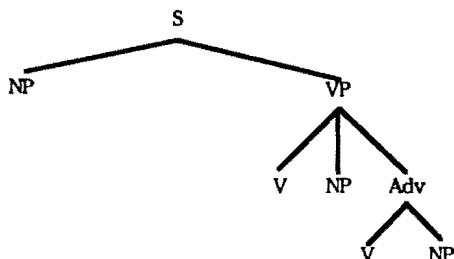


This generation of a flat structure as a base rule was somewhat controversial, as at the time binary branching was in vogue for most non-adverbial material. Indeed, it wasn't long before the interpretation of serial material as adverbial was brought into the theoretical arena.

Schachter's analysis was criticized by Stahlke (1975) in reply to the aforementioned article. His objection was based on the "adverbial" nature of the subordinate verb phrase. Stahlke was not arguing that all serials were adverbial in nature, recognizing that there were some irregular "lexical collocations", some modal structures, and some sentential

conjuncts. But for the majority of cases he proposed the following analysis.

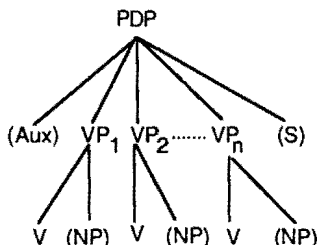
34)



It should be borne in mind that this proposal was made before the introduction of X syntax by Jackendoff (1977), so there was nothing objectionable in the rule which rewrote an adverb as a combination of verb plus noun phrase, though this structure would be more plausibly analyzed as a verb phrase (as in Sebba 1987). Ignoring the question of node labelling, the structure is in any event quite different from that of Schachter (and Filbeck, to be presented below), in one way in which the structure proposed by Sebba differs from my own analysis. But Schachter's analysis fails to posit a single syntactic constituent which includes all of the serialized material.

Filbeck's analysis of Thai serial verb constructions does not differ substantially from that of Schachter (1974):

35) Filbeck 1975



Here the predicate phrase dominates a node for auxiliary verbs followed by a number of verb phrases and then, optionally, sentential material.

Williams (1976) proposed analysis which was quite similar in many respects, but which added an important dimension in that he explicitly recognized subcategorization features on some serialized verbs. His syntactic rule was stated as:

36) $VP \rightarrow V(NP)(PP)(VP)$

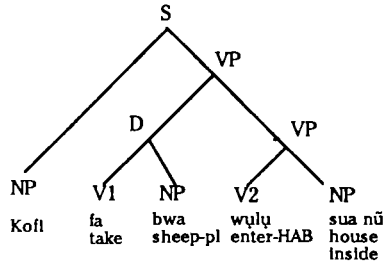
In his dissertation on Sierra Leone Krio, he discussed the following example, which we will return to in (41):

- 37) Mòdùpe dɛ wákà gó nà mákdt (Krio)
 Modupe PROG walk go LOC market
 'Modupe is walking to the market.'

The last of the major analyses of the 1970's was that presented by Van Leynseele (1975). She proposed a new phrase structure node, D, which would have the rewriting specifications of a VP but would represent a subordinate proposition. She gave the following preliminary base-generated surface structure of a sentence of Anyi:

- 38) Kòfi fa bwa wùlù sùá nū
 Kofi take sheep-PL enter-HAB house inside
 'Kofi takes the sheep into the stable.'

39)



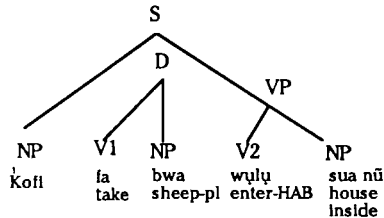
Van Leynseele 1975 preliminary analysis of (38)

She notes that this analysis has the advantage "That semantically full handling verbs may be inserted directly under V1 without positing other underlying sentences or clauses, thus avoiding the epenthetic verb insertion rule as well as equi-NP and equi-fa-phrase deletion rules."

But Van Leynseele was not fully satisfied with this analysis. She went on to remark that "In the above P-markers, I have followed Stahlke (1974) in assuming that there is one VP node dominating all surface VP's in series. However, Schachter (1974:278) maintains that this highest VP node has not been "earned" by Stahlke's argumentation. And as yet, no clear evidence for such a node has turned up in the Anyi material. Therefore, the following rule may turn out to be superior to the preceding proposals: $S \rightarrow NP (D) VP$."

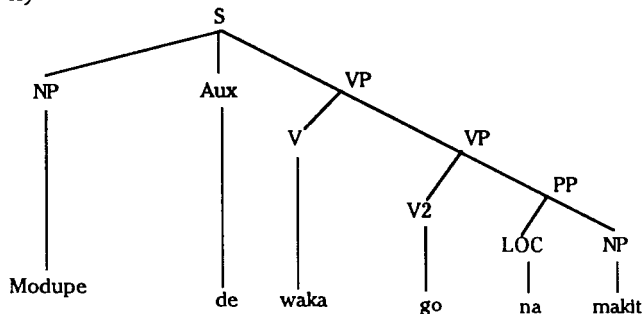
She provided the following structural representation:

40)



The debate continued in Willimas (1976), where the following structure was suggested:

41)



Sebba notes that:

"The lexical entry for *go* would specify that it is followed by a PP bearing the thematic relation GOAL; this would enable *go* to fit into the available VP position after *waka*. Other "serial verb" sequences in which one verb phrase appears to bear a thematic relation with respect to a verb are handled similarly by appropriate lexical features.

Williams's analysis is an important advance in that it recognizes that relationships between at least some "serial verbs" must be handled in the lexicon. It also provides a phrase structure rule which treats the whole verbal series as a constituent, which is an advantage over Schachter's proposal."

So far so good. But Sebba has an objection:

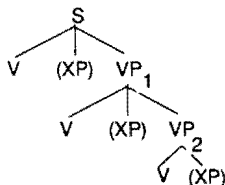
"A problem with Williams' rule ... is that it produces many strings which cannot occur in surface structure, and would therefore have to be excluded by rules from some other component, for example lexical strict subcategorisation rules or syntactic filters."

It is precisely this course which is being adopted in the present work. Semantic subcategorization rules in the lexicon will be shown to be necessary to account for the different types of verb serialization, particularly with regard to semantic interpretation of subjecthood. Thus no *additional* mechanism is necessary in this treatment of serial verb constructions.

The issue of the phrase structure of serial verb constructions then left the theoretical arena for about a decade. This may have been due, in part, to the fact that the wide acceptance of X-theory which followed the publication of Jackendoff (1977) rendered many of these proposals unworkable. In addition, the presence of serial verb constructions in many creole languages brought a new angle to the debate - the question of the relationship between serialization and creolization. In this new debate, sparked by the publication of Bickerton (1981), the actual phrase structure was not a significant issue.

In the mid-1980's, however, the structure of serial verb constructions once again became a popular topic. Sebba (1987) was the most thorough study of the phrase structure undertaken to date. He provides the following representation¹¹:

42) Sebba 1987



here X can stand for N or P. (The top left V was probably intended to be NP.)

In Sebba's view, adopted by most of the GPSG analysts and Categorical Grammarians (e.g. Welker 1990), the verb phrases are not sisters, but rather are embedded VP nodes. He does not offer any syntactic rationale for this decision, but relies instead on semantic criteria. Even so, he runs into some problems. Consider the following data from Akan (Chrastaller 1930):

- 43) a.

| | | | | | |
|------------------------------------|---------|-----|----------|----------|-----|
| ode | adare | not | tɔwaa | nkrɔmata | no |
| he-take | machete | the | cut-PAST | branch | the |
| 'He cut the branch with a machete' | | | | | |

b.

| | | | | |
|---------------------------------|---------|-----|----------|---------|
| ode | adare | not | tɔwaa | nehɔ |
| he-take | machete | the | cut-PAST | himself |
| 'He cut himself with a machete' | | | | |

c.

| | | | | |
|--|------|------|-----------|---------|
| *Kofi | de | Amma | blɪmm | no |
| Kofi | take | Amma | beat-PAST | her/him |
| (* on the reading where <u>no</u> =Amma) | | | | |
| cf. Kofi used Amma to beat her*(self) [Commentary: Sebba 1987] | | | | |

Sebba comments on (43.a & b) that:

"If a non-reflexive pronoun occupies the NP3 slot, this could not be coreferential with an inanimate NP in the same sentence because inanimate NP's do not have pronominal anaphora in this position, although animate NP's do. However, a pronoun in NP3 position does not seem to be able to refer to an animate NP2 either."

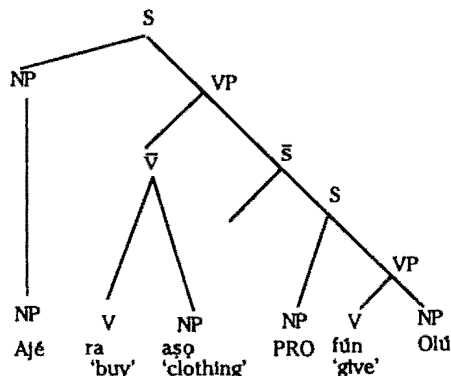
He then cites (43.c) and notes that:

"Since NP1 is clearly the subject of both V1 and V2 in these examples (as shown by the reflexivization facts) we analyse them as "VP-coordination" produced by the rule VP → VP VP. The fact evidenced by (c), viz. That a pronoun in NP3 position cannot be an anaphor of NP2, is probably to be explained by another principle."

The problem here is that the examples cited (40.a & b), seem to be normal serial V constructions, but the reflexivization facts¹² force Sebba to adopt an analysis for these forms which is unlike other instrumental forms. In fact, he adopts for these examples the analysis which is posited in this thesis for all subordinating serials. I therefore take these examples to be supportive of the syntactic analysis adopted in this work.

Awoyale (1988) proposes, and then rejects, the following two analyses which differ from all others proposed so far. In the first, he posits a sentential complement to the matrix verb phrase, while in the second he proposes a structure in which the object of the matrix verb is embedded in a subordinate clause (both trees are meant to represent the sentence Aje bought clothes for Olu):

44)



Of this structure, which he doesn't attribute to anyone in particular, he raises the following questions.

"First ... what is the status of PRO? Second...how does \bar{S} come in (without a COMP node) when there is no evidence of coordination or embedding?..."

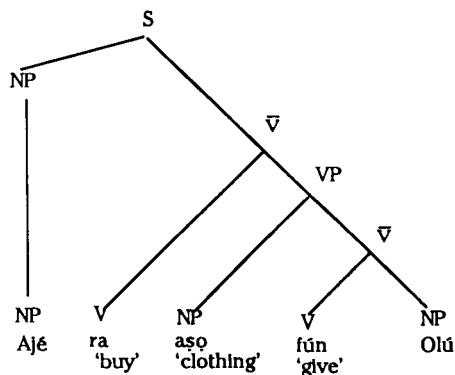
Although I do not find this representation appropriate, neither of these objections seems valid. If one wanted to have a complementation structure of the sort shown in (45).

45) [_S NP [_{VP} V̄ [_S COMP [_S PRO VP]]]]

This should not be objectional on structural grounds just because there is not surface complementizer. The simplest objection to the given structure is that the subordinate material does not behave like an \bar{S} (or S), in that it cannot contain an overt negator of its verb (as we shall see below), or any agreement or tense markers which do not match that of the matrix verb. In other words, nothing about this structure suggests why it must obey the Unsounderability Condition and the Tense-Aspect Simultaneity Condition.

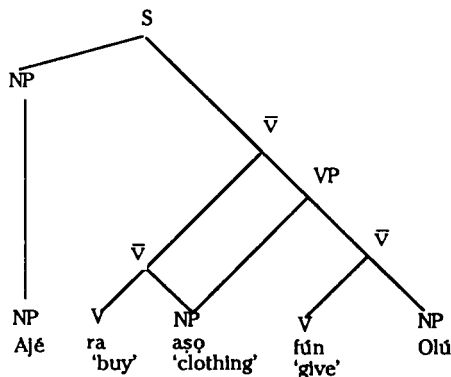
Awoyale's second tree is presented in (46):

46)



Here his objection is that there is no indication that fun is subordinate to ra, and he raises the question "does this structure commit us to recognizing double object structures in the language?". With regard to the first part of his objection, I agree completely, having made the same point about Sebba's representation. But on the second point I am less clear, unless he had in mind the following:

47)

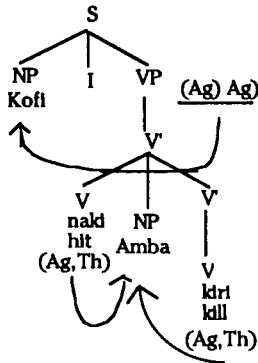


But perhaps he is concerned more (or exclusively) with the semantics in his comment. Unfortunately, the GB framework does not allow such a separation of syntactic and semantic analysis, because the Projection Principle requires that the lexical requirements of the verbs be consistent at all levels of a derivation.

These concerns of thematic relations and the structural requirements imposed by the projection principle gave rise to an elaborate description of the syntax of serial verb constructions by Mark Baker. Baker explicitly allowed the sort of double object constructions

which Awoyale was reluctant to recognize. His analysis employed the following description of a typical serial construction:

48) Baker 1989



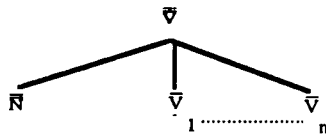
'Kofi struck Amba dead'

Here the θ -roles are assigned as shown by the arrows (AG = Agent, Th = Theme). For Baker, serialized constituents are dominated by a single V' node, but there is no node which dominates a single constituent such as hit-Amba. Under Baker's Government and Binding account, nakd must be to the left of Amba by the word order principle that X^0 θ -marks phrases to its right in VO languages. Kiri must be to the right of Amba, since it indirectly θ -marks it, by the word order principle that for categories with a bar-level greater than zero, the category is predicated of an NP to its left in VO languages.

49) Schiller 1989c [$\bar{V} \rightarrow N \bar{V}^*$]¹³

In Schiller (1989b) I provided the rule cited in (50), which would allow for structures similar to that of Schachter and Filbeck.

50)



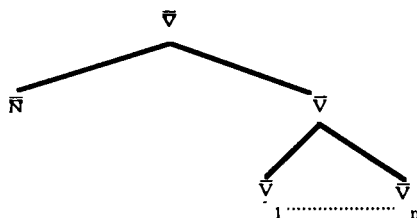
In fact, however, the analyses presented in the paper did not make direct use of these rules. Instead two rules, never explicitly stated, were assumed throughout:

51) $\bar{V} \rightarrow N \bar{V}$

52) $\bar{V} \rightarrow \bar{V}^*$

So that the appropriate structure, used in the analyses of the paper, is:

53)



It is this structure which I take to be the correct structural description of the **syntax** of the subordinating serial \bar{V} construction. Many of the alternative structures proposed in the preceding section were motivated more by semantic than syntactic consideration. In Chapters 4 and 5, I will present arguments for particular semantic structures that do not always parallel the syntactic structure presented above, but I know of no syntactic arguments against the simple concatenation of \bar{V} 's.

Welker (This volume) provide an analysis of very simple subordinating serial verb constructions from a categorial grammar perspective. She distinguishes two types, depending upon whether there is a shared object or a case of the object of the first verb functioning as the semantic subject of the second.

She proposes a complex category $(VP \backslash (VP/NP)) \backslash NP$ which can be described as a category which combines with a noun phrase to its left to form a category of verb phrase lacking an noun phrase. This category is created in the lexicon by a productive lexical rule which applies to only those verbs which happen to participate in serial constructions. The semantic translation of the syntactic rule depends on properties of the specific lexical item. In the given example, the translation provided by Welker is as in (54.a), as a result of the aforementioned lexical rule, which is presented in (54.b).

54) a. $hit'(a)(k) \text{ ? } kill'(a)(k)$

b. If β_1 is a lexical item of category VP/NP , there is another lexical item β_2 of category $(VP \backslash (VP/NP)) \backslash NP$. The semantic translation of $\beta_2 = \lambda y \lambda x [R(y)(x) \text{ ? } \beta_1(y)(x)]$.

If, however, the final verb in the string is intransitive, as in a serial which might be translated as 'Kofi push Amba fall', Welker's analysis is as in (55):

55) a. $push'(a)(k) \text{ ? } fall'(a)$

b. If β_1 is a lexical item of category VP , there is another lexical item β_2 of category $(VP \backslash (VP/NP)) \backslash NP$. The semantic translation of $\beta_2 = \lambda x y [R(x)(y) \text{ ? } \beta_1(y)]$.

Without getting into the theory-internal details of the formalism, the analysis basically states that there are lexical rules which will turn both transitive and intransitive verbs into the category $(VP \backslash (VP/NP)) \backslash NP$, with semantic transition rules preserving the difference in transitivity. As this proposal is quite new, the details of analysis for many of the more complicated serial constructions have not been worked out. I include it here not merely for completeness, but rather because it does show that categorial grammar can, indeed, manage to account for the correct semantics of a serial verb construction without directly involving a syntactico-semantic mismatch¹⁴. One question which immediately springs to mind is whether this complicated syntactic category is justified on any grounds, e.g. are there any other lexical items in the languages under consideration (or any other languages, for that matter), which are members of the category $(VP \backslash (VP/NP)) \backslash NP$.

The preceding discussion constitutes an overview of various treatments of subordinating serial \bar{V} constructions.

3. Defining Subordinating Serial \bar{V} Constructions

We can now define the Subordinating Serial \bar{V} Construction as follows:

- 56) A construction is a Subordinating Serial \bar{V} Construction iff:
- It contains two or more \bar{V} 's dominated by a single \bar{V} node.
 - The \bar{V} 's are associated with a single proposition in the semantics, which contains an F and an MF.
 - The \bar{V} 's obey the Tense Aspect Simultaneity Condition.
 - The \bar{V} 's obey the Unsubstitutability Condition.
 - At least one argument is shared by the predicates corresponding to the two verbs.

These criteria eliminate the following constructions which are sometimes included in the discussion of serial verbs:

- Coordinating Serial Verb Constructions (b,c,d)
- Auxiliary structures ($\bar{V}\bar{V}$). (a)
- Causatives. (a)
- Complementizers (a)¹⁵.

On the other hand, our criteria permit consideration of "coverbs" as serial verbs, a topic which will be mentioned briefly below.

In addition, we can further define a subset of Subordinating Serial \bar{V} Constructions where the order of the \bar{V} 's matches the order one would expect to find given the fundamental word order of the language. That is, such that in a VO language the VP representing the semantically primary proposition (F) precedes the VP representing the semantically subordinate proposition (MF), while in an OV language the semantically subordinate proposition (MF) precedes the VP representing the semantically primary proposition (F).

57) *Canonical Subordinating Serial Verb Construction: A subordinating serial verb construction where the order of the \bar{V} 's reflects the head-complement order of the language.*

4. The Semantic Case Instantiation Principle and its predictions.

The Semantic Case Instantiation Principle (58) was introduced in Schiller (1989c).

58) *Semantic Case Instantiation Principle (SCIP): Semantic Case relations are instantiated by the most concrete possible mechanism.*

Because of the Relative Abstractness Of Levels (Schiller 1989c), it will be predicted that semantic cases such as Instrument, goal, source and location will be instantiated morphologically, if possible. If a language does not have the capacity for morphological instantiation, syntactic means will be used, generally via adpositional phrases. Failing that, a language may resort to Subordinating Serial Verb Constructions. Some languages, e.g. Kalam (Pawley 1980) do not even have that mechanism available, and must employ yet another mechanism.

Let us begin by considering the Instrumental case [INS], as instantiated in a number of languages:

- 59) a. Ya režu khleb nožom. (Russian)
 $I_{[NOM]}$ cut bread_[ACC] knife_[INST]
 'I cut the bread with a knife.'
- b. I cut the bread with a knife. (English)
- c. Sokh kac sac nɔm kɔmbut (Khmer)
 Sok cut meat with knife
 'Sok cuts the meat with a knife.'

- d. Mi e tekl a nefi koti a brede (Sranan)
 I ASP take the knife cut the bread
 'I cut the bread with a knife.'
- e. prichaa chây milt tât nia (Thai)
 Prichaa use knife cut meat
 'I cut the bread with a knife.'
- f. Khñom yook kambut tau kac sac (Khmer)
 I take knife go cut meat
 'I picked up a knife to go and cut meat.'

(59.a) shows the morphological case instantiation of [INS], via an inflectional ending in Russian. (59.b & c) demonstrate the syntactic case instantiation of [INS], where a preposition is used. In the both examples, the preposition chosen is identical to the marker of comitative relations. Thai and Sranan lack appropriate prepositions, however, and therefore a serial verb construction is employed, involving the verb 'take' (59.d & e). But what about (59.f)?

(59.f) is not a Subordinating Serial Verb Construction. Informants state that this cannot be used to express instrumentality. Even with an aspect marker inserted, it cannot mean that the meat was cut with a knife. In fact, the sentence implies that the meat did not get cut at all, only that the knife has been picked up with that intent. Yet the sentence is not exactly parallel to (60), which involves a clear purpose clause marked by 'give' in a Subordinating Serial Verb Construction. Nothing in 2f. implies any intent.

- 60) Khñom yook kambut 7aoy tau kac sac (Khmer)
 I take knife give go cut meat
 'I picked up a knife to go cut meat.'

Why should Khmer and Sranan differ so greatly in the interpretation of (59.d & f). The availability of (59.c) combined with the Semantic Case Instantiation Principle, suggests that Khmer use (59.c) rather than (59.f). The Semantic Case Instantiation Principle may, in fact, be related to Gricean maxims. The more concrete manner of expression is often briefer.

5. Coverbs and Syntactic Polysemy

Syntactic Polysemy (defined in Schiller 1989a) is a phenomena seen in many languages, especially isolating languages. A single morphological form serves to fill a variety of syntactic functions. Consider the examples below:

- 61) a. Sokh nau phtěäh (Khmer)
 Sokh be-in house
 'Sok is home.'
- b. Sokh rōäh nau srok srae
 Sokh reside in province rice-field
 'Sokh lives in the boonies.'
- c. Sokh nau rōäh nau srok srae
 Sokh still reside in province rice-field
 'Sokh still lives in the boonies.'
- d. nau tunlee saap Sokh cap trəl
 in lake fresh Sokh catches fish
 'In the Tonlee Saap, Sok catches fish'
- e. khñom thvə kaa nau laəy
 I do work in still
 'I'm still working.'

In (61.a), /nau/ is the main verb, while in (61.b) it can be analyzed either as a preposition or as part of a compound verb. An aspectual function is seen in (61.c)¹⁶, while an unambiguously prepositional function is seen in (61.d). The situation in (61.e) is less clear, with analysis as an adverbial phrase (or compound word) or prepositional phrase possible. Since the phrase

is not possible in topic position (a possibility for prepositional phrases but not adverbial phrases in Khmer) and cannot be reduced to a single occurrence of /nəu/ (62), I favor an analysis as a compound adverbial.

- 62) a. *khñom thvəə kaa nəu
I do work still
b. nəu laəy khñom thvəə kaa
in still I do work
c. nəu suən cbaa khñom thvəə kaa
in garden garden I do work
'I work in the garden.'

The relationship between the use of a word as both main verb and preposition is the subject of a great deal of literature. The "coverb" analysis (Li & Thompson 1973, Clark 1977), where a verb is bleached of its semantics over time and becomes a preposition is appropriate here, even though it only covers two of the uses of the Khmer word /nəu/. For many years there has been discussion of data from various language families where a diachronic analysis has been suggested where a verb gradually loses its syntactic status as a verb and takes over the function and category of a preposition, or, in some cases, maintains both the category of verb and the category of preposition. This process is sometimes called *grammaticization* (e.g. Matisoff, to appear).

6. Word Order and Subordinating Serial Verb Constructions

The fundamental word order of a language and the presence of serial verb constructions are related in a number of obvious and subtle ways. Schiller (1990b) discusses these links with regard to a wide range of serial constructions, but here we will be concerned only with subordinating serial verb phrase constructions.

Recall that previously the following types of serial structures were distinguished:

- 63) i. V+V concatenation structures
ii. V+V̄ auxiliary structures
iii. V̄+V̄ serial verb phrase structures
iv. Finite V+ Finite V̄ serial finite verb phrase structures

The distribution of these types according to fundamental word order is as follows:

| 64) | I(V*) | II(V+V*) | III(V̄*) | IV(V̄*) |
|-----|-----------------|----------|----------|---------|
| SVO | yes | yes | yes | rare |
| SOV | yes | yes | rare | no |
| VSO | no | no | no | no |
| VOS | ? ¹⁷ | yes | no | no |

Why should word order considerations influence serial verb constructions? Let us consider each of our four types and the characteristics each requires in order to be present in a language.

Type I can be described as an incorporation structure in the sense of Baker (1988). From a transformational standpoint, the language must permit X⁰ movement in order for these to arise. From an Autolexical perspective, it is necessary that a language have a node admissibility condition permitting the concatenation structure $\sqrt{[V,V]}$ in the syntax, and that object sharing be licensed in the semantics.

Type II is the least demanding. All that is required here is that auxiliary structures exist where verbs can take V̄ complements.

Type *iii* serials call for semantic properties of subject and object sharing, require that a \bar{V} be structurally present, and have a node admissibility condition $\phi[\bar{V}, \bar{V}]$.

Type *iv* serials require everything needed for type *iii* serialization, but in addition seem to allow either or both of the serialized constituents to be treated as a head, thus eligible for inflection.

Three types of serialization ($V+\bar{V}^*$, \bar{V}^* , Finite \bar{V}^*) can only be present if a language contains a verb-phrase constituent, since each crucially involves serialization of phrasal constituents headed by a verb. Thus we do not expect to find these types of serialization in languages where there is no \bar{V} constituent. Languages where the subject intervenes between verb and object (VSO, OSV - see discussion below) should not have the possibility of these serials, and indeed, no such constructions have been attested. That leaves SVO, SOV, OVS, and VOS languages as candidates for phrasal serialization.

Serial verbs constructions tend to be found in languages which are most consistent typologically with regard to the order of head and complement.

For SVO languages, this is type 9, comprising 17% of Hawkins' Extended Sample, where the head is on the left in the major categories¹⁸ (verb>object, noun>adjective, noun>genitive, preposition>noun). Most of our SVO examples fall into this category.

For SOV languages, the most consistent is the strict head-final type 23, which is found in 29% of Hawkins Extended Sample. (object>verb, adjective>noun, genitive>noun, noun>postposition).

Among the less consistent types, we find an unusually large number of type 10 languages (considering that they comprise only 5% of Hawkins Extended Sample), which differ from type 9 in that the adjective precedes the noun. The presence of such languages in our serial collection is not surprising, since many of them are English-based creoles.

We also find a number of rarer types and also some languages which show mixed word order characteristics. But the vast majority of our examples are SVO languages (type 9 & type 10). Given the widespread geographical and genetic differences among the languages under consideration, it is reasonable to assume that there is a principled link between word order and the existence of subordinating serial verb phrase constructions.

One principle which can help to explain this distribution is that of Tal (1985):

65) *Principle of temporal sequence: the relative word order between two syntactic units is determined by the temporal order of the states which they represent in the conceptual world.*

This non-syntactic Linear Precedence principle would be reflected in a separate, Constituent-Order module of the grammar¹⁹ in an automodular approach.

Arguments in serial constructions are often shared by more than one predicate. Some theoretical approaches (such as GB, GPSG) show this sharing at a syntactic level, while the Autolexical approach treats this as a purely semantic phenomenon. Under this latter approach, word order cannot play any role, since only constituents, and not lexemes, are ordered in the semantic component.

Combining the Principle of Temporal Sequence with the observations made above, we will expect to find type *iii* subordinating serial verb phrases in four types (SVO, SOV, OVS, and VOS) of languages, with the verb phrases appearing in an order reflecting the occurrence of events in the real world. We will not expect to find this sort of serialization in

VSO or OSV languages.

This last observation has empirical support in the Mon-Khmer family of languages, where the few VSO languages show only coordinating, and not subordinating serialization, as in (21), a clever explanation of which is provided by Seuren (this volume).

- 66) a. ti me ho taw lik me pin ke-en (Ravtia)
 take you go send letter you accompany to here
 Go, take the letter, and come back.

I have not been able to find examples of serialization in OSV languages, and thus the prediction that coordinating, but not subordinating serialization is possible cannot be empirically tested.

We now turn to languages which are predicted to have subordinating serial verb phrase constructions according to the analysis presented so far, but which either lack such constructions or show some deviation from the normal types of serialization we have considered so far.

There is a strong tendency for SOV languages to display verb concatenation rather than verb phrase serialization, despite the presence of a verb phrase constituent²¹. Matisoff (to appear) has already noted this point. Nevertheless there are a few examples of SOV languages which show characteristics of verb phrase serialization. They are genetically unrelated and geographically far apart, so it is reasonable to assume that each of these languages developed serialization independently. Our examples are Ijo (West African), Barai (Papuan), and Lahu and Yi (Tibeto-Burman). As we shall see, however, none of these languages conform completely to the definition of canonical subordinating serial verb construction²¹ employed in this paper. These SOV languages do, however, have some kind of subordinating serial verb constructions. These constructions differ from the canonical serial verb constructions in a variety of ways.

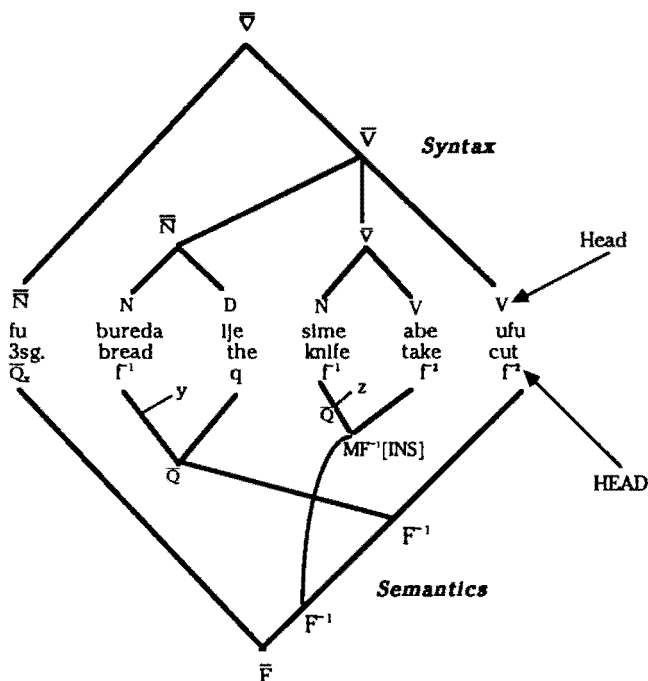
Ijo is the SOV language which comes closest to having canonical subordinating serial verb constructions as shown in (67).

- 67) a. duma tun-ni a p[ri] (Ijo)
 song sing-Ø her-give
 sing a song for her
 b. b)de ŋr)mɔ-ni. a-yar
 cloth send her send
 'send her a cloth'

Ijo is a head-final serializing language described in (Williamson, 1965). We would therefore expect the \bar{V} representing the main predication in (67.a) (presumably the act of singing) to appear at the end of the sentence, with the \bar{V} representing the secondary predication preceding it. Instead, it seems that the semantically more important \bar{V} precedes the semantically subordinate \bar{V} . This can be explained by employing Tai's Principle of Temporal Sequence given in (65) above. Under that analysis, the \bar{V} in (67.a) representing the singing precedes the \bar{V} representing the act of giving because the action of singing logically precedes the gift of the singing to the recipient²².

Barai, a Papuan SOV language shows serialization of \bar{V} , but with an interesting twist. The subordinate \bar{V} seems to be embedded within the matrix clause, as represented in the following autolexical graph (68)²³.

68)



The apparent discontinuity should not be misconstrued - the semantic component contains no linear precedence relations, only dominance relations, and thus this semantic representation is no different from one in which the semantic constituent $MF_{[INS]}$ (Instrumental modifying predicate) is to the right of its sister predicate.²⁴

Lahu is a Sino-Tibetan SOV language which has been deeply investigated by James Matisoff (1973). It is a language characterized by a great deal of verb concatenation, but much less \bar{V} serialization. Nevertheless, there are some examples of what seem to be typical serial \bar{V} constructions.

- 69) y5 á-cu-ka yù lē g5-cá cā ve (Matisoff: to appear)
 3prn chopsticks take PRT cabbage eat PRT
 'He, taking chopsticks, eats cabbage.'

There are two particles (PRT) involved in this sentence. Matisoff (to appear) describes lē as a particle which indicates that the VP to which it is concatenated is not the final VP in the sentence. The ve particle is commonly used to indicate an affirmation of the previous

assertion according to (Matisoff 1973). The particle might be viewed as some sort of coordinator or subordinator, but for our purposes it is sufficient merely to note that its obligatory nature demonstrates that the V serialization in Lahu is indeed marked in some fashion, and thus does not fully meet the criteria specified for subordinating serial verb constructions.

Yi, also known as Lolo, is a language with both SOV and SVO characteristics. Wheatley (1984, 1985) presents convincing arguments that "The Yi languages reflect a change from OV-concatenating to OV-serializing structure." Wheatley provides evidence such as the following contrast (25) between Yi and the related Tibeto-Burman language Lahu to which I have added a comparable Mandarin Chinese example.

- 70) a. ηa^{23} je^{23} $b'e^{23}$ $t'x^{44}$ $s\ddot{a}^{33}$ ts_1^{31} ku^{44} tsx^{44} (Yi)
 my mother clothes put trunk inside be-at
 'My mother put the clothes in the trunk.'
 b. ηa $\dot{\eta}e$ $v\ddot{a}7-q\ddot{a}$ $th\ddot{a}$? $ta-q\ddot{o}$ $\dot{\eta}-q\ddot{h}\ddot{o}$ $k\ddot{a}$ $t\ddot{a}$ ve $y\ddot{o}$ (Lahu)
 my mother clothes OBJ box inside put PT PT PT
 'My mother put the clothes in the trunk.'
 c. wo de $mu-qin$ ba $yifu$ $fang$ zai $xiang-zi$ li (Mandarin)
 I (poss) mother BA clothes put in trunk inside
 'My mother put the clothes in the trunk'

For discussion of these examples, see Schiller 1990 (a, b or d).

What is the difference between SVO and SOV languages that encourages SVO V-serialization while preferring concatenation in SOV languages?

There are at least three possible explanations for the head-medial (from a constituent viewpoint) order:

i) The given order may well be due to the principle of temporal ordering suggested in Tal (1985).

ii) Kim (1988) discusses a mechanism of preverbal focusing in languages of this type (SOV strict head-final, Type 23). He concentrates on the correlation between the occurrence of a focused element to the immediate left of the verb with the typological facts of type 23 languages.

Applying Kim's observations to the ljo examples, we can suggest that it would be inappropriate for the verb phrase representing the semantically subordinate material (notated for present purposes as VP₂) to precede the verb phrase representing the semantically primary material (notated for present purposes as VP₁). Consider the possibilities given in (71):

- 71) a. NP VP1 VP2
 b. NP VP2 VP1

If the position immediately to the right of the first verb encountered in the string is the one which receives focus, then if ljo employed a canonical serial verb construction (71.b) this focus would be on the object of the subordinate predicate. By reversing the order of the VP's, the focus falls on the object of the primary proposition instead. Thus in (67.a), the focus is on song rather than her.

iii) A third answer lies in an observation articulated in Dryer (1980). He noted that many SOV languages employ SVO order when the direct object is a sentential complement. Hawkins (1988:34) refined the observations made by Dryer and came up with the following

restatement:

"If sentential NP's and simple NP's of the same grammatical relation have at least partially different word orders, and if these differences involve *clause final* and *clause internal* position, then it will be the sentential NP which exhibits the preference for clause final position."

Since serialized phrases are rather clause-like, especially if one takes semantic as well as syntactic information into account, it is not unreasonable to suggest that the order of serialized verb phrases is rightward, rather than leftward (as one would expect in a head-final language), due to the same factors which affect sentential NP's as opposed to simple NP's.²⁵

It is quite likely that a combination of the three proposed explanations is at work. Focusing, temporal ordering, and the heaviness of clausal constituents all provide forces which encourage the \bar{V} representing the primary proposition to precede the \bar{V} representing the subordinate proposition.

Finally, there remains the question of word order in SVO languages. In some cases these languages also have the shared object to the right of a verb cluster.

- 72) a. koun baoh phtēah s'aat (Khmer)
 child sweep house clean
 'The child sweeps the house clean.'
 b. koun baoh sōm'aat phtēah
 child sweep clean_(CAUSE) house
 'The child sweeps the house clean.'
- 73) a. Kofi nake kiri Amba (Sranan)
 Kofi hit kill Amba
 'Kofi struck Amba dead'
 b. Kofi nake Amba kiri
 Kofi hit Amba kill
 'Kofi struck Amba dead'

There are two attested word orders for the serial construction. (73.a) is a marked form which was attested in the 19th century and is still accepted by some speakers today, according to Sebba (1987). Baker (1989), in a footnote, asserts that such sentences "are not normal Sranan", and therefore fails to provide an explanation for this alternative word order, which his account rules out as follows.

Under Baker's Government and Binding account, *nake* must be to the left of *Amba* by the word order principle that X^0 θ -marks phrases to its right in VO languages. *Kiri* must be to the right of *Amba*, since it indirectly θ -marks it, by the word order principle that for categories with a bar-level greater than zero, the category is predicated of an NP to its left in VO languages.

What is particularly puzzling is that the structure in (73.a) should be an allowable case of incorporation (cf. Baker 1988)²⁶. One could plausibly suggest that there are two forms of Sranan, call them SrananA and SrananB, which differ only in that the SrananA dialect facultatively permits incorporation structures while SrananB dialect does not. Of course further data regarding SrananA, the 19th Century dialect, would be necessary before positing the incorporation structure.²⁷

One can conclude that the Semantic Case Instantiation Principle, combined with the Principle of Temporal Sequence, helps to explain the distribution of subordinating serial verb phrase constructions in the languages of the world. Such constructions are in no way marked, but are fully predictable given certain properties of a language. An SVO language

lacking morphological or prepositional devices will have subordinating serial verb constructions in the unmarked case. We do not expect to find many languages which lack these constructions, and indeed, we do not find them. On the other hand, SOV languages are less likely to serialize verb phrases, and so we find verb phrase serialization as a marked case. Instead, we see verb concatenation as the dominant device, though in some cases, such as Kalam, a more original method of marking semantic case is employed.

1 This paper was adapted from my doctoral dissertation (Schiller 1990d). This revised version of the paper takes into account the many insights provided to me at the Mini-Conference, and reference is made to a number of those papers, which, I hope, are actually presented in this volume. All references are to handouts and notes made at the conference, and not to the final versions as published in this volume. The reader should note that my representations may not match those published in other papers in this volume, for which an explanation may lie in a change of mind on the part of an author, or, more likely, a simple and unfortunate misrepresentation on my part. I have been fortunate in obtaining the advice and opinions of a number of fine scholars, including (in more or less chronological order) Jerrold M. Sadock, Alexander Caskey, Jim McCawley, Derek Bickerton, Steve Lapointe, Marshall Lewis, Pieter Seuren, Pieter Muysken, Geoff Pullum, Martha Ratliff and all of the conference participants. With all that help, one might think that this work is error-free. It almost certainly isn't, and to the extent that there are mistakes in judgement, analysis, or reference, please blame me alone.

2 See Schiller (1990d:Chapter 4)

3 Secondary subject deletion

4 In Schiller 1990d the notion of governed pseudocomplementation, restated as semantic subcategorization, plays a very significant role in distinguishing between two major types of subordinating serial \bar{V} constructions.

5 This seems to bear a strong resemblance to switch-reference phenomena.

6 Translation from the Russian is mine.

7 Ayowale (1988) makes reference to T-serialization with regard to Yoruba, but fails to provide examples, and then goes on to remark that "It is clear from the weight of evidence presented in this paper that we can ignore IP in our account of serialization."

8 Given that it will be suggested below that negation can also have only a single operator with scope over the proposition represented by the serialized constituents, it might be advisable to generalize TASC to a semantic single operator specification condition. It is not clear, however, that the restriction on negation holds as universally as does the restriction on tense-aspect marking.

9 Lit. already-with, this compound is fully lexicalized.

10 Where * indicates zero or more occurrences of VP.

11 I do not yet have a copy of the dissertation, so this tree is taken from Sebba 1987:22.

12 Assuming these to be syntactic in nature. From a GPSG standpoint, the syntactic and semantic facts are by definition parallel, so that the question of in which component reflexivisation lies is irrelevant.

13 Where * indicates one or more occurrences of \bar{V} .

14 I was not alone in assuming that the mismatch between syntax and semantics would rule out a categorial analysis, but I underestimated the λ calculus.

15 It has long been noted that serializing languages tend to use the verb 'say' as a complementizer. But it is by no means clear that the verb which precedes it constitutes a \bar{V} . That is, verbs of speaking may subcategorize for sentential complements headed by 'say', rather than for simple verb phrases.

16 This use provides support for a metaphorical device licensing syntactic polysemy. Specifically, Lakoffs "States are Locations" metaphor provides a nice link between the adverbial and main verb uses.

17 I have yet to find examples in the O-first languages. VOS is attested in a number of Austronesian languages, but so far I have not found a \bar{V} -serializing example, as most resemble Fijian in having either inflectional morphology or prepositions, where the Semantic Case Instantiation Principle predicts that \bar{V} -serialization will not be found.

18 The relative order of head-complement in noun-numeral structures, and relative clauses, as well as some other minor categories will not be considered here.

19 see Schiller 1990d, Chapter 7.

20 It may be that some SOV languages lack a verb-phrase entirely, but some, such as Japanese have been shown to possess a \bar{V} constituent.

21 A canonical subordinating serial verb construction is a subordinating serial verb construction which has verb phrases appearing in the syntax in an order which conforms to underlying word order in terms of the both the semantic and syntactic head. In other words, in a VO language one expects that the phrase containing the semantic head will precede the subordinate material, and that in an OV language it will follow subordinate material.

22 Baker (1989) objects, but his objection is dealt with in Schiller (1990b).
 23 An alternative structural description would involve an incorporation structure with the verb take incorporating the object knife, with the incorporating structure concatenated with the verb cut. This possibility, suggested by Jerrold Sadock, can be confirmed or denied on empirical grounds, based on the availability of this structure to appear with modifiers (adjectives or determiners) of the noun knife. Unfortunately, my access to data from Barai is limited to a very brief corpus in Olson cited in Crowley (1987).

24 It is interesting to compare this representation with the analysis of Tamil proposed in Nagarajan (this volume).

25 What those factors are remains a matter which needs to be investigated, although perhaps Dryer's paper contains further ideas.

26 Mark Baker (p.c. April 1990) suggests that compounding might be a better explanation than incorporation, but given the productive nature of this serialization in Khmer I find this an unacceptable solution.

27 This is a typical example of an all-too-common linguistic practice. Competing forms or dialectal variants exist in many languages, and linguistic theory should be able to explain all such variants. Thus to suggest that Sranan is somehow abnormal or no longer productive does not remove the obligation to explain the principles of that form of the language.

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